Remarks

Claim 1 was rejected under 35 U.S.C. 103 based upon U.S. Published Application 2004/0151171 to Lee. The Lee reference in paragraph [0060] teaches a number of buffers (for example, K in Fig. 7) matched to the number of destination addresses. Therefore buffers are linked to addresses in Lee. In applicant's amended claim 1, now having the combined limitation of former claim 21, now cancelled due to the incorporation in claim 1, the number of buffers is related to packet length ["...buffer data based upon reorganizing the data by assigning data packets according to length to different delay queues..."] (note that the assigning is independent of addresses as in Lee) with the example of 3 buffers for short, medium and long length packets. Such a grouping leads to a more favorable packet loss ratio (PLR). Notwithstanding this difference between applicant's claimed invention, the Office action suggested that teachings missing from Lee could be supplied by Guild, U.S. Published Application 2004/0037561.

Guild is sorting packets into queues according to packet length with the purpose of scheduling packets from each queue onto a single wavelength dedicated to each queue (Guild, page 1, paragraph 0010 and page 2, claim 1). Packets from any queue may be scheduled on any wavelength. This is quite a different scheduling system than claimed by applicant's claim 1. The invention of claim 1 monitors vacant wavelengths for deciding which of the queues are allowed to schedule packets ["...outputting of data when...buffered destination is vacant..whereby data packets having shorter lengths have greater probability of encountering sufficient vacant outputs of different wavelength..."]. In applicant's claimed invention, fair distribution of packet length is not claimed. Short packet lengths tend to win available transmission bandwidth. This is novel, non-obvious and contrary to the objectives of other systems.

It should be further noted that Guild teaches that the number of wavelengths employed for transmission of the data packets is selected so that there is a substantially optimum utilization of traffic capacity across the wavelength divided optical signal. In the claimed invention, the number of wavelengths employed for transmission is not decided but is inferred from network load, i.e. availability of bandwidth.

With regard to the subject matter of Claim 21, now incorporated into claim 1, the examiner has cited Ohba, U.S. Pat. No. 6,101,193 combined with Lee and Guild. The combination of these references is inapposite. It was shown above that Lee and Guild are somewhat contradictory regarding scheduling from the buffer to the output. Ohba does not resolve the issue. While Ohba teaches packet length designated queues (col. 8, lines 53-56), this does nothing to resolve the inconsistency and contrary teaches of Lee and Guild described above relative to amended claim 1.

In the Office action, regarding claim 21, the Examiner notes that ***Regarding claim 21,*** [italics and bold in original] "Lee teaches the switch of claim 1 as discussed above. However, Lee does not explicitly teach a plurality of queues in the buffer unit, each queue being associated with a distinct range of data packet lengths."

In response to this, the idea of having queues with distinct ranges of data packet lengths in not the point of novelty of claim 1. The point of novelty and non-obviousness has to do with what is scheduled for output, with a probability for shorter packets.

Claim 1 is believed to be patentable for the reasons stated above. Claims that are dependent on claim 1 and incorporate the limitations thereof and should be patentable. Rejections of the dependent claims rely on the inappropriate combination of Lee and Guild references.

Similarly, independent claim 13 is now combined with former claim 19. The method of claim 13 claims outputting data packets of shorter lengths with a greater probability of encountering sufficient vacant outputs of different wavelengths.

With regard to claim 13, the Examiner states:
"***Regarding claim 13,***[bold and italics in original] Lee teaches a method for organizing data flows in an communication network including at least one switch, where said switch is associated with at least one buffer and at least a dataflow that can be divided into data packets, comprising: communicating buffered data to the switch, and buffering the data in the buffer unit until a predefined number of wavelengths leading to a buffered packets destination is vacant **[See figure 2 and paragraph 0060 lines 19-24 where an a large capacity optical router including an optical switch is shown and where a determination is made to determine whether an available wavelength channel exists and if there is no (predefined number of wavelength = one) available wavelength channel, the data frame waits in the buffer].** However, Lee does not explicitly teach the predefined number is at least two. However, **Guild, in**

the same field of endeavor, teaches selecting the number of wavelengths selected for transmitting data can be based on packet lengths by allocating a wavelength to data packets of a particular size which results in'n'number of wavelengths needed [emphasis added] [see paragraphs 0020-0023; see also fig. 1]. It would have been obvious for a person having ordinary skill in the art to buffer one or more of the groups packets disclosed in Lee until 'n' number of (where n>=2) wavelengths are available. This is desirable because it enhances the transmission efficiency of an optical network, as well as minimizing the variation in the arrival times of transmitted packets of data."

Applicant contends that the Examiner is mischaracterizing Guild. What Guild actually says in paragraph 0021 is that "the transmitted wavelength identifies the length of a cell in a packet stream, resulting in simplification of the switching mode management". What this means is set out in paragraphs 0010 and 0011 of Guild where it is stated that "individual packet streams [are associated] on to respective wavelengths of a wavelength division multiplexed optical signal..." in paragraph 0010 and "wavelength-division multiplexor to assign the individual packet streams on to the respective wavelengths of a wavelength-divided optical signal" in paragraph 0011. This is the dedicated wavelength argument made above. Guild has no adaptive allocation as stated by the Examiner, but an assignment ("identification") of wavelengths according to packet length for purpose of simplification. Thus, the rejection of Applicant's claim 13 is based upon a misreading of a critical portion of Guild.

Amended claim 13 pertains to the scheduling of data packets according to length in different buffer queues while monitoring output wavelengths whereby data packets having shorter lengths have greater probability of encountering sufficient vacant outputs of different wavelengths. This adaptive scheduling is very different from the assigned wavelength output of Guild and is patentable as being novel and non-obvious.

Claims dependent on claim 13 incorporate the limitations thereof and should be patentable for the same reason.

Conclusion.

Reconsideration of the amended claims is requested. A Notice of Allowance is earnestly solicited.

CERTIFICATE OF TRANSMISSION

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4) on the date shown below.

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